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MARKETING FOOD DOMESTICALLY IN JAMAICA

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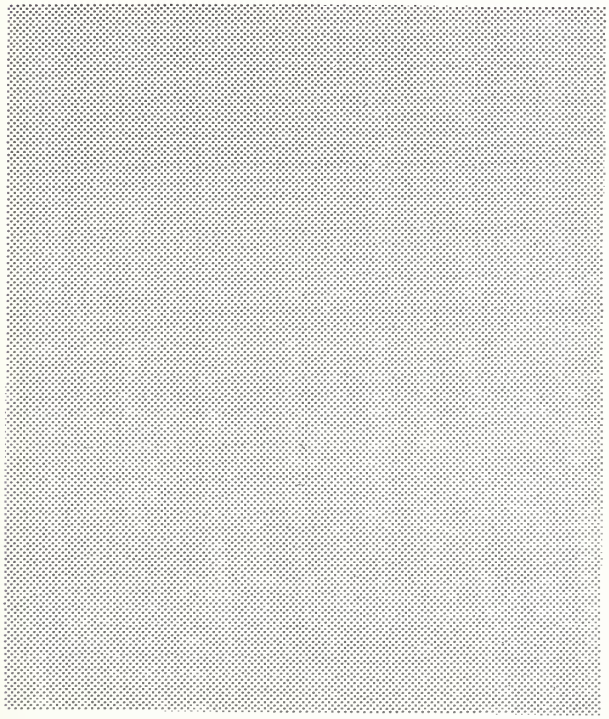

MARKETING ECONOMICS DIVISION
ECONOMIC RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE

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MARKETING FOOD DOMESTICALLY IN JAMAICA 1/

The attention of agricultural economists in the United States is turning increasingly to the agricultural problems of the underdeveloped areas of the world. Agriculture is the major industry presently in many of these countries, and its improvement and expansion will be one of the major avenues for increased income, exchange earnings, and probably employment in the years ahead. Although each developing country has certain unique components of its resources and setting, the island of Jamaica is faced with many of the same conditions and problems as are found in other islands of the Caribbean and in other areas of the world. 2/ Furthermore, Jamaica and the United States may be expected to develop increasing trade and cultural ties because of geographic proximity and because of the complementary nature of the agriculture of the two. Likewise, the Alliance for Progress may lead to further cooperative efforts by these two countries. Also, the economic ties between Jamaica and Great Britain -- of which Jamaica has been a colony for over two centuries -- may be expected to change with the independence of Jamaica within the British Commonwealth on August 6 and the prospective affiliation of the United Kingdom with the European Economic Community. This article deals mainly with agricultural marketing problems in the domestic market in Jamaica and the possibilities of making agriculture a more important element in the future growth of the country through improvements in marketing. Some of the methods discussed in this article already have been employed elsewhere and may have application to conditions in other developing areas that are in transition from subsistence to commercial agriculture.

General Econor y

The Jamaican economy has made remarkable progress since World War II, and during the 1950's real income per capita increased at a rate of about 6 percent (compounded) annually. Despite this growth, the level of per capita income is now less than 20 percent as high as in the United States, and the unemployed constitute about 15 percent of the labor force. Thus, many persons have not shared in the increased economic activity, although governmental services pertaining to such matters as education and medical attention have been expanded significantly. Continued economic growth is the major need and goal of the country. Figure 1 shows the island of Jamaica.

A persistent problem with which the country is faced is the steady rise in population. Despite migration to England and

1/ Prepared by Winn F. Finner, who was FAO Marketing Advisor to the Jamaican Government in 1961, and Fred L. Faber, who studied poultry marketing in Puerto Rico. Both are agricultural economists of the Marketing Economics Division, Economic Research Service, USDA.

2/ The frequent similarity among underdeveloped countries with respect to agricultural marketing conditions has been referred to in several recent studies, e.g., Abbott, J. C., "The Role of Marketing in the Development of Backward Agricultural Economies," Journal of Farm Economics, Vol. 44, May 1962, pp. 349-362.

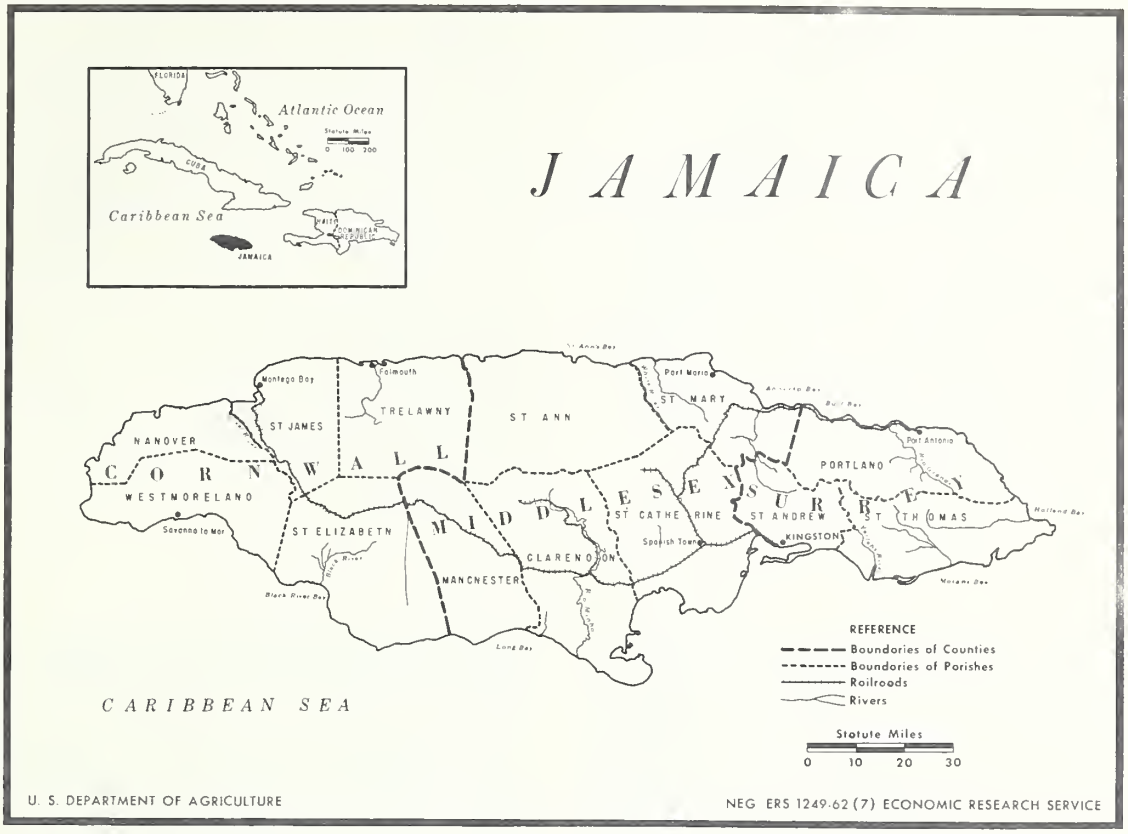

Figure 1

-- to a lesser extent -- other countries, the population in 1960 of 1.6 million was about a fifth larger than in 1950.

Increasing demand for food generated mainly by a growing population and rising incomes has maintained a steady upward pressure on food prices, which rose by over 60 percent between 1950 and 1961. Such increases are not unusual in economies undergoing significant expansion, but they can be deterrents to future growth both because of the increases in costs they represent and because of their severe impact on people with fairly fixed money incomes and on the unemployed.

Despite population increases, a high rate of unemployment, underutilized land on many farms, and a growing domestic demand for food, agricultural production has decreased. Exports of farm products have increased slightly, but imports of food for domestic use rose from about 20 percent of the total supply in 1950 to roughly 30 percent in 1960. Total agricultural output for both domestic use and export was 5 percent lower in 1959 than 5 years earlier.

The extent of future expansion of the Jamaican economy will depend to an important degree on changes in agriculture. Employment in agriculture is larger than in any other industry, and agricultural exports account for over 40 percent of all exports. Agriculture, directly and indirectly, probably is the basis for over 40 percent of gross national product. Moreover, as suggested above, much of the resource base necessary for agricultural expansion is now available, although remedial measures will be needed if resources are to be employed effectively in agriculture.

To be sure, the quadrupling of tourism and the rise of Jamaica as the world's leading producer of bauxite during the past decade both are important developments,

as is the establishment of several new industries such as garment making. However, the attraction of investment capital has been difficult and painstaking, and the creation of substantially larger employment opportunities in nonagricultural occupations for the unemployed will be beset with major obstacles. Problems will be further aggravated if emigration is seriously curtailed by the recent legislation enacted by the British Government and by the continuation of severe entry restrictions by other countries to which Jamaicans might migrate. Such restrictions alone could lead to an increase of about one-third in the labor force over the next decade.

Thus, it is important that agriculture be improved and expanded. It is likewise important that this improvement be accomplished without: (1) Undue demands on investment capital; (2) unnecessary strains on foreign exchange; (3) a heavy demand on the funds of the Government of a poor country, which is faced with major needs for more schools, roads, port facilities, research activities, nutritional programs, and numerous other public services; and (4) technological changes in agriculture that will substantially add to unemployment for protracted periods. Condition four above might be modified, of course, were methods derived to share gains from technology among those displaced by it.

Agricultural Production

Jamaica is a country of small farms (table 12). There are almost 200,000 on 1.8 million acres. Seventy percent are of less than 5 acres, and over 95 percent do not exceed 25 acres. These small farms, in the aggregate, are the major source of domestically produced food crops for local consumption and produce three-fourths or more of the total output of most foods. Likewise, they are the major source of supply for most kinds of livestock except beef cattle.

Several characteristics of these small farms (25 acres or less) and the people who operate them can be identified.

In addition to being small, many farms are fragmented. The 195,000 small farms in 1958 consisted of over 350,000 parcels of land. Much of this land is extremely hilly and eroded from cultivation during the last 125 years or more. There is a substantial seasonal variation in rainfall over the Island, and most farms experience a shortage of water for crop production for periods of 2 to 8 months each year. Supplementing rain by irrigation is seldom practiced and would be extremely difficult on much of this land. These conditions lead to a seasonal pattern of crop production, much as in colder climates, and to the need for much hand labor in farming operations. Only simple mechanical equipment is used because of topographical conditions. About three-fourts of the small farms have neither mechanical nor animal power.

Less than 30 percent of the cultivated land is planted to a single crop at one time, and it is not unusual to find 10 to 15 different crops growing intermixed on small plots. This pattern aids in reducing erosion as several canopies of leaf cover -- ranging from breadfruit and mangoe trees to low-growing annuals -- are created. However, this also means that row culture is little practiced, which in turn creates distinct difficulties in using fertilizer, insecticides, and adopting other cultural improvements.

Production also is characterized by a wide variety of crop and livestock enterprises. Practically all enterprises conducted on farms in the United States (except for certain legumes and grains) are to be found in Jamaica, plus 100 to 150 products not grown commercially in the United States. Thus, agriculture yields small quantities of a wide variety of products, many of which are consumed on the farms where produced. Jamaica aptly is called "the land of samples."

The farmers who operate these lands generally are hard working, but they have

Table 12.--Number of farms, acreage in farms, and cultivated acreage, by size groups, Jamaica, 1958

Farm size groups	Farms	Acreage	Cultivated acreage
Acres	Number	Acres	Acres
Less than 1	42,900	22,000	15,900
1 to 5	98,324	248,681	158,760
5 to 25	53,300	546,300	223,800
25 to 100	4,012	176,872	35,973
100 to 500	639	130,994	24,591
500 and over	314	697,796	153,642
Total 1/	199,500	1,822,800	612,700

1/ Rounded.

little of the technical information or supplies needed for more efficient production. Even the existence of these would not overcome the difficulty posed by the small size of farms. Most farmers have had no technical training in agriculture, and it would not be easy with limited means to design an extension service to reach them effectively. This is particularly true because many of these farms are not on roads; they have no electricity, and battery-operated radios are few; there is no rural delivery of mail; and some of the farmers cannot read. Furthermore, this type of isolation from much of the world beyond the immediate community seems to produce a marked skepticism toward new methods and practices.

As a result of these conditions, farm income and assets are small. Many farmers have gross farm incomes of $200 or less annually. Perhaps one-half of the operators have income from off-farm work, though this may be only for a few days per year at a daily wage of $1.00 to $1.25, unless they are skilled or obtain employment on a sugar estate. Likewise, current assets probably average less than $50 per small farm.

With the abolition of slavery in 1838, acquisition of a small plot of land freehold was a lofty ambition for the freed slaves and one which many of them achieved. Now many rural Jamaicans consider practically any off-farm employment -- either in Jamaica or in countries to which Jamaicans migrate -- superior to agriculture. Small-farm operators often report considerable difficulty in hiring labor. Agricultural employment is regarded as inferior because of low income potential and probably a low social status. Many individuals who could have become superior farmers have, in fact, moved to nonagricultural employment. Thus, there is not a well-developed middle class in agriculture which could provide the leadership for many of the needed improvements. Many production problems exist to their present degree, because there are almost 200,000 small farms rather than, say, 20,000 larger farms. 3/

In summary, the present supply of locally produced foods for domestic use comes from a large number of small farms, on which total production is tending downward despite average farm prices for many products being 25 to 50 percent

3/ A good recent treatment of peasant agriculture in a developing country is contained in: Edwards, David, An Economic Study of Small Farming in Jamaica, Institute of Social and Economic Research, University College of the West Indies, 1961.

higher than those received by U. S. farmers in recent years. Various production difficulties have resulted in yields that often are only about a fifth as large as in commercial production areas in the United States. The great diversity, seasonal variation, and small scale of production per farm, together with the difficulty of reaching many farms, have accentuated the problems of marketing. These problems include assembling products, maintaining quality, establishing grade standards, developing and disseminating satisfactory market intelligence, and avoiding unusually wide swings in supply and, thus, in prices.

Present Marketing Conditions

Annual food consumption in Jamaica during 1958, the latest year for which data are available, approximated 1.8 billion pounds. Of this, 1.4 billion pounds were produced in Jamaica and 0.4 billion pounds were imported. Part of domestic production was consumed on farms where produced. Probably 0.5 billion pounds of goods were so used, leaving about 0.9 billion pounds that were produced and sold locally. Thus, the Jamaican internal marketing system handles about 1.3 billion pounds of goods annually. In addition, roughly 1.2 billion pounds of domestically produced commodities are exported, but this volume is not considered in the following discussion.

Diversity of Marketing Organizations

Several types of organizations are involved in marketing domestic food supplies, although most of these play a minor role.

The Jamaican Government conducts commercial trading in a wide variety of food crops. During the war and immediately thereafter, these operations were sizable, partly because of purchases in the conduct of a price support program. Since then, the volume handled has declined -- as a percentage of total food supply -- and in 1960 accounted for less than 1 percent of the total. Government institutions are required to buy some of their foods from this trading agency, and sales also are made to food stores and other local buyers. The operations of this agency have been hampered, because it must comply with various governmental procedures concerning employment and financial controls.

Farm cooperatives were first established more than 100 years ago in Jamaica. However, as is also true in a number of other Caribbean Islands, they are not now important in the marketing of products for domestic consumption. Twenty-six cooperatives reported sales of food products locally in 1960, but their aggregate sales were less than 1 percent of the total food supply. Slightly over one-fifth -- 42,000 -- of all farmers in Jamaica sold some of their products through cooperatives during that year, but sales were less than $8.00 per member. No doubt several basic changes will be needed before cooperatives can occupy a major position in the local food economy. Some producer groups, not organized as cooperatives, have become important in the sale of a few products such as eggs and broilers.

The Jamaica Agricultural Society -- the largest farm organization -- also has conducted marketing operations in the local market, but these have been a minor phase of the Society's activities, which are oriented largely to informational and extension work. Total sales are of roughly the same magnitude as those handled by cooperatives.

Retail food stores seem to be handling a slightly increasing proportion of total domestic food sales and operators of some of these shops procure supplies directly from farmers. The substantial growth in number of supermarkets during the past decade has centered a larger volume of business in the hands of fewer merchants than was true earlier. And a few of the supermarket organizations have begun to make more systematic

arrangements with local farmers and other suppliers. Nevertheless, the bulk of the merchandise sold by retail food shops is imported.

Wholesalers and other dealers also function in the economy, accounting for a major portion of the foods imported. They procure fairly small quantities of locally produced foods from farmers, or the groups mentioned above, for resale to retail stores.

The predominant handler of domestically produced and consumed foods is a type of buyer known as a higgler, of whom there are several thousand. Higglers handle little poultry and meat, but they account for a major share of the fruits, vegetables, ground provisions (yam and other edible tubers), beans, peas, and other foods.

Higglers are of two principal types. One type both assembles and sells products, and the other specializes in retailing. The first type -- usually the wife of a farmer or other person living in the country -- assembles her products and those of her neighbors. She transports these products (not infrequently a mile or more) usually by head carry or donkey to a main road over which a truck passes. Then she accompanies the produce on the truck to one of the markets on the Island. Here she may sell directly to housewives, to the second type of higgler, or to other buyers.

In Jamaica, there are 99 parochial markets. These are centers, established by the Government, where buyers and sellers can meet, and many higglers go to such markets to sell supplies. These markets usually have few facilities other than a roof, sometimes a cement floor, and perhaps a light or two. For the payment of a fee -- usually 35 cents or less -- the higgler rents a few square feet of floor space, where she displays products until they are sold.

Other higglers make sales from house-to-house, on street corners, or in other locations apart from the established parochial markets.

Outside observers no doubt can detect numerous practices of higglers which are inconsistent with generally recommended marketing methods. Products are moved in small lots -- a higgler may spend 3 to 4 days per week in assembling and selling perhaps 100 pounds of produce. In order to minimize return hauling costs and for ease in handling, higglers frequently use bags rather than rigid containers, so damage to products in transit is likely to be greater than when rigid containers are used. Only rudimentary attention is given to grades, and the level of sanitation varies widely. Farmers may find higglers an unsatisfactory outlet, particularly in seasons of large production, because they may buy only part of the supply that is ready for market. Also, higglers generally prefer to handle products with a high value per pound.

Despite these conditions, however, the higgler system will not be easy to replace and may be expected to function with vitality for another generation or more. Higglers have become exceedingly adept at cultivating the goodwill of both suppliers and customers. They have amassed a considerable knowledge of what can and cannot be handled profitably. Higglers have provided a level of competition which has thwarted attempts to introduce "more modern" methods. 4/

4/ A recent detailed study of the operations of 5 higglers buying from farmers and retailing in the largest city in Jamaica showed the following weekly averages per higgler for a year: Sales, $19.28; cost of transportation and market fees, $1.72; payments to farmers for produce, $13.62; income to higgler for several days labor plus capital use, $3.94. Thus, farmers received slightly over 70 percent of the retail sales value of their products. (From Katzin, Margaret F., Higglers of Jamaica, Unpublished Ph.D. thesis, Northwestern University.)

They are not equipped, however, to: (1) Handle the large volumes such as required by supermarkets; (2) provide a dependable source of the quality of product demanded by hotels and similar buyers, including the export market; and (3) handle seasonal surpluses through storage, processing, or through coordination of production plans with prospective markets.

Facilities

Facilities are available for several marketing operations, including local transportation (where roads are available), cool and cold storage, canning, and pasteurizing. There are numerous instances, however, where costs could be reduced by using improved equipment such as a machine -- rather than hand labor -- for peeling of citrus for canning. Perhaps of greater importance than the type of technology used is the need for improving the management of present marketing resources and increasing the level of skills for many marketing jobs such as meat cutting.

Many observers contend that facilities are seriously inadequate, either because of the lack of sanitary safeguards or because they are lacking for certain operations. Livestock slaughtering facilities may be cited as an example of the first. Much slaughtering is done with the simplest of equipment and with no refrigeration for the handling of meat. Particularly in rural areas, the measures taken to protect wholesomeness generally are substantially lower than, for example, in the United States. Major improvements will be needed if Jamaican meats are to compete effectively with imported supplies in the growing "quality market." However, the bulk of the meat is sold to middle- and low-income consumers, and there is little evidence of a demand from this group for higher standards of sanitation or of a willingness to pay the higher prices associated with such standards.

Likewise, it is true that equipment may not be available for a number of operations such as the washing, sizing, and waxing of cucumbers for export. Yet, the high irregularity both from season to season and year to year in the demand for such services raises pronounced difficulties for firms attempting to supply them.

Retailing facilities are now undergoing significant improvement through growth in the number of supermarkets -- both chains and independents. Nevertheless, the bulk of the country's retail food shops are still very small and charge prices which are relatively high.

One of the most serious service inadequacies is that of ocean-going shipping, except for a few of the well-established export crops.

Marketing Information

Prices and other marketing conditions obviously are of major importance in a country where agriculture is the major industry. Much market intelligence is informally disseminated through the Island by truckers, higglers, and others. However, for domestic food crops no objective market information is systematically available. Furthermore, the lack of grading systems and the wide variety of weights and measures used are problems that will need to be overcome, if a satisfactory market news system is to be established. Likewise, better methods will need to be developed for disseminating such information. Otherwise, the considerable and irregular price differentials among various markets in the country are likely to continue, and agricultural decisions generally will continue to be based on fragmentary knowledge.

Pricing Practices

In the sale of domestic food crops, producers usually do not receive price premiums for superior quality. Cooperatives and other farm groups generally sell products in lots, which include all receipts from participating farmers, and the same price is paid to all farmers. Much the same conditions exist in sales by individual farmers. Some buyers, of course, attempt to procure

all supplies from particular farmers known to have products of above-average quality and uniformity. And higglers may be selective in choosing the produce they will buy from a particular farmer. However, the premiums associated with such purchases may be nonexistent or vary considerably. Approximately the same situation occurs in livestock sales, although price differentials associated with age and type of animal are fairly common.

There are no established grades for fresh products sold domestically, and this condition will need to be changed before a satisfactory system of selling by grade can be established. Much greater progress has been made in export sales, where quality differentials customarily are paid by foreign buyers.

A second pricing condition which dampens producer incentives is the slowness with which payment is made by some buyers. Delays of 6 to 8 weeks or more between the date of delivery and final payment are not unusual.

Thinness of Market for Some Products

Ten to 15 products constitute the major foods in the diet of most Jamaicans. This diet is mainly cereals, yam and other tubers, banana, sugar, and fish. Most other products are consumed in much smaller volume. The total supply of many fresh vegetables, for example, sold in a particular season could be grown on less than 20 acres producing commercial-yields. Sales of vegetables harvested on a few more or less acres can have a pronounced impact on prices, as can fluctuations in yields because of weather variables. The same general conditions characterize the present market for many other products, i.e., small changes in quantities offered can mean sharply higher or lower prices. It is true that use can be made of short-term storage to lessen the adverse impact on price of an unusually large supply. However, the low level of consumption throughout much of the year and competition from other products during periods when there would be out-of-storage movements both suggest only a moderate role for storage programs for many commodities. Cold storage charges of slightly over 1 cent per pound per month operate to reinforce this conclusion. Some means of more systematically relating planting to anticipated sales in the domestic market would appear to be a more fruitful way of dealing with this problem.

Marketing Costs

Marketing costs tend to be high, although there is much variation among products and processes. In some cases, rather substantial reorganization will be needed to achieve any significant cost reduction. It is difficult, for example, to see how higglers could lower the cash costs they incur in assembling products and transporting them to consumption centers. Higglers are limited in the quantity they can handle physically and usually have no alternative to shipping by commercial truck. It would be possible, nevertheless, to achieve lower transportation (other than assembly) costs by the movement of full truck loads in single lots from country points rather than to have numerous individual lots of 100-200 pounds, each in separate packaging, transported as is now done. Likewise, retailing margins may be reduced as the numerous small shops are partially replaced by much larger stores.

In the meantime, prospects are not favorable for reductions in total costs incurred by higglers in assembling and retailing products. Likewise, cost reduction in livestock slaughter seems unlikely, although further centralizing of slaughtering might enable greater returns from byproducts. These returns might offset the likely higher plant costs of operating under higher standards.

On the other hand, it should be possible to lower marketing margins (and perhaps costs) in the sale of fluid milk, particularly if the volume of sales is expanded. The margins between prices received by farmers -- 11 to 12 cents

per quart -- and paid by consumers -- 23 to 26 cents per quart -- are fairly similar to those prevailing in eastern United States cities. However, fewer services are provided in Jamaica. Little milk is homogenized or pasteurized, second-hand rum bottles frequently are used as containers, and usually no refrigeration is provided. Most milk is produced within a few miles of consumption, so that transportation costs are low relative to those in major United States markets.

Margins (and to some extent costs) in the handling of imported foods appear high, and the Jamaican Government controls retail prices of a few imported foods. Typically, only a single agency imports a particular brand of food.

Marketing costs incurred by governmental organizations also are susceptible to reduction partly through lowered administrative and fixed costs. These organizations, like most firms, suffer from a volume which is too small. Larger volumes would permit lower unit costs to such organizations, as well as to firms engaged in processing and storing. It is not uncommon for importers to store U. S.-purchased foods in the United States, rather than in Jamaica until needed, because of the lower storage rates prevailing in this country.

Prices of most inputs such as cans, other packaging, transport equipment, and motor fuel are higher in Jamaica than in the United States, but labor rates are substantially lower. Much of the labor employed by marketing firms is paid $1.50 to $2.00 per day.

Direction of Marketing Improvements

Improvements in marketing alone cannot rectify agricultural shortcomings in Jamaica or in other developing areas. If a fully efficient agriculture is to be developed, shortages of water, electricity, and other resources must be remedied. Technical knowledge must be improved. Defects in the land tenure system, such as those enabling increases in income to be channeled largely to landowners rather than operators, must be corrected. Also, deficient credit and tax systems must be revised. Programs for improving and broadening education, of course, will be of major importance to the entire economy. Nevertheless, marketing improvements can play a major role in producing benefits for consumers and incentives for producers. The absence of marketing improvements probably will largely nullify other measures taken to strengthen agriculture. Jamaica obviously requires a unified program to improve conditions in production and marketing.

The principal improvements required in marketing to provide broader producer incentives for small farmers appear to be:

1. Better appraisal of market prospects for agricultural products.

A major present difficulty is that too many products are produced in too small quantity. This situation leads to several difficulties.

First, extremely diverse research programs need to be conducted concerning appropriate varieties and cultural techniques for scores of farm enterprises. Even in a country as small as Jamaica, findings suitable for one area, may not be appropriate for other areas.

Second, an extension service needs to be trained and staffed to relay the resulting wide variety of technical information to farmers.

Third, widely diversified marketing facilities need to be maintained for inspection, grading, processing, and other

activities, many of which will be conducted for only short periods during each year.

Fourth, the problem of developing satisfactory market appraisals and intelligence are made much more difficult by the diversity of enterprises.

Fifth, farm income is lower than if production were centered in those few enterprises having the highest comparative advantage.

These problems could be materially reduced if production were centered on a smaller number of products. Thus, analyses of prospective price levels for different products at various levels of supply and in different markets would enable a major improvement in the selection of products in which Jamaica has a comparative advantage. These analyses and information on production conditions would provide the bases for recommending the relatively few enterprises in which farmers should specialize. In time, these analyses should aid in the further shift from subsistence to commercial agriculture and should moderate the view that Jamaica should produce practically all the food it consumes. This view now often finds expression in import controls and other governmental regulations.

2. Establishment of an organization to give systematic and continuing direction to marketing improvement.

Specifically, this organization should aim at: (1) Providing a stable and continuing outlet for produce of marketable quality, the production of which is economically justified; (2) reducing marketing costs; (3) coordinating its marketing efforts with those concerning production. No doubt the organization would require modest governmental financial assistance in the beginning, and it should be organized so as to have the flexibility necessary to conduct commercial operations effectively.

As indicated earlier, the present marketing system is not prepared to purchase all output in some seasons, even when profitable export or other markets may exist. It is not supplying the growing market of hotels and other buyers of premium produce (perhaps about 10 percent of the total market at present), with the result that much of this supply is imported. The marketing system is not consistently serving the low income market as effectively as it might. As a result, outlets for many locally grown products are not as large as they might be, and a persistent and widely expressed view among farmers is that they would not be able to sell additional production.

A well-directed organization should be able to bring about a greater degree of price stability through better use of storage, domestic nutritional programs, and perhaps processing. Primarily it might help through the development of export markets for a few additional products.

Adoption of a grading program (including the necessary enabling legislation) and reflection of quality differentials in prices paid to farmers should enhance prospects of meeting a larger part of the growing domestic demand for certain foods from Jamaican production. This should result in economic benefits to farmers without additional costs to consumers.

The proposed organization should be able to reduce the costs of marketing through development of large-scale operations, selective installation of new equipment, introduction of a wide variety of well-known practices such as the use of plastic liners in storage containers and proper ripening practices for bananas. The assignment of much greater responsibility to employees could reduce labor use per unit of product. It is not unusual, for example, for several employees to accompany a delivery truck, one to ascertain quantity, one to handle payments, one to drive, and others to do the necessary physical handling.

This organization should be able to aid in a better coordination of production with prospective markets through such means as contract production. As a means of more quickly developing a satisfactory volume, it also might interest a few estate operators in production of selected commodities.

3. Expanding the research program.

Modest increases in research and statistical programs relating to marketing would aid greatly. These should yield improved basic data and evaluations of specific marketing alternatives, programs, and prospects; and better current information for such purposes as establishing a market intellegence service.

4. Consolidating governmental activities.

General advantages of economy and consistency would be expected from consolidation of governmental activities pertaining to agriculture.

If adopted, how significant would the foregoing be in improving the output and efficiency of Jamaican agriculture and in accomplishing related benefits concerning employment, income, and foreign exchange balances? Economic incentives are more meaningful to a commercial agriculture than to an agriculture still bearing a strong imprint of subsistence farming. This is particularly so of a subsistence agriculture that has lost social status and in which many operators have exceedingly sparse resources. Nevertheless, the operators of these farms are, economic men who will respond to a changing economic environment as they will to their increased political freedom. However, they probably will not permit economics or politics to affect their daily living as much now as perhaps will be true a generation hence.

Growth Through Agricultural Progress